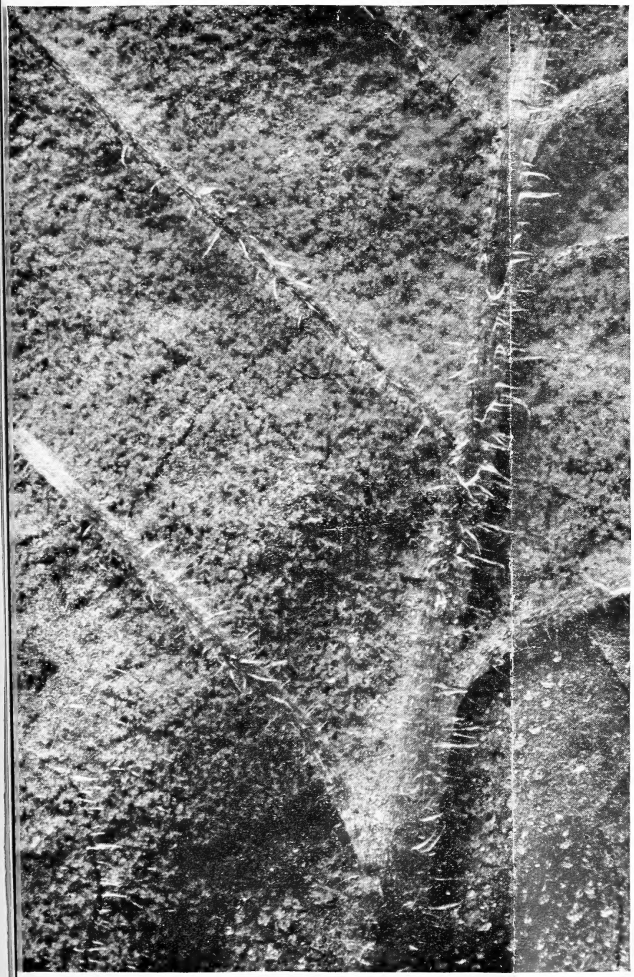
TOBACCO BLUE MOLD CONTROL



AWI-77 Issued November 1943
U. S. DEPARTMENT of AGRICULTURE

CONTROLLING plant diseases prevents losses in crops and money and also conserves the manpower, time, and effort otherwise wasted when diseased crops fail to bring returns. Blue mold (see cover illustration) is an outstanding disease problem throughout the flue-cured tobacco area. It attacks the plants in the seedbed and may weaken them and delay transplanting, or kill the plants outright.

Prevent Plant Loss

In 1942 many tobacco growers lost a large part of their plants from a combination of frost and blue mold. Most serious damage occurred in Georgia, where 80 percent of the plants were killed, but the situation was more or less critical throughout South Carolina and North Carolina and in some parts of Virginia and Tennessee. Plant-bed tests in all flue-cured tobacco areas showed that it is practicable to protect plants effectively from both frost and blue mold damage.

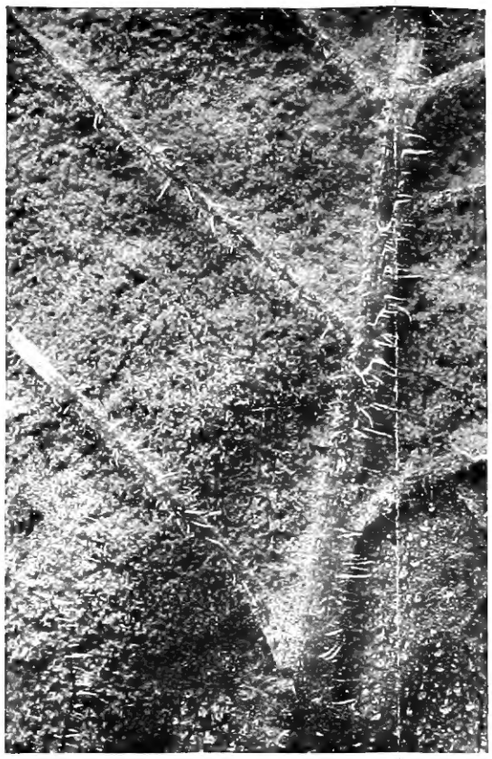
Sow at Proper Time

Many growers still attempt to evade blue mold by the early sowing of very large bed

Prepared by

E. E. Clayton, Senior Pathologist
Division of Tobacco Investigations
Bureau of Plant Industry, Soils, and
Agricultural Engineering
Agricultural Research Administration
U. S. Department of Agriculture

TOBACCO BLUE MOLD CONTROL



AWI–77 Issued November 1943
U. S. DEPARTMENT of AGRICULTURE

CONTROLLING plant diseases prevents losses in crops and money and also conserves the manpower, time, and effort otherwise wasted when diseased crops fail to bring returns. Blue mold (see cover illustration) is an outstanding disease problem throughout the flue-cured tobacco area. It attacks the plants in the seedbed and may weaken them and delay transplanting, or kill the plants outright.

Prevent Plant Loss

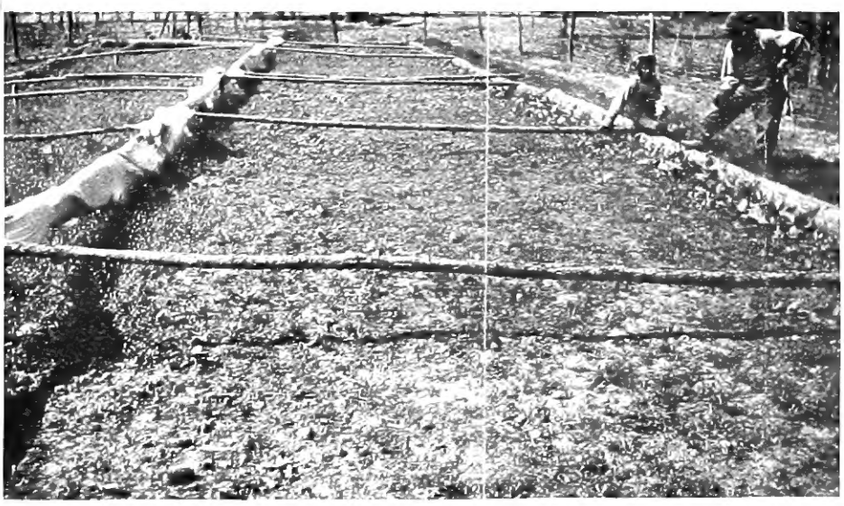
In 1942 many tobacco growers lost a large part of their plants from a combination of frost and blue mold. Most serious damage occurred in Georgia, where 80 percent of the plants were killed, but the situation was more or less critical throughout South Carolina and North Carolina and in some parts of Virginia and Tennessee. Plant-bed tests in all flue-cured tobacco areas showed that it is practicable to protect plants effectively from both frost and blue mold damage.

Sow at Proper Time

Many growers still attempt to evade blue mold by the early sowing of very large bed

Prepared by

E. E. Clayton, Senior Pathologist
Division of Tobacco Investigations
Bureau of Plant Industry, Soils, and Agricultural Engineering
Agricultural Research Administration
U. S. Department of Agriculture



Result of early sowing and failure to protect tobacco bed against blue mold or frost—about 1,800 small, weak plants to 100 square yards of bed. Photographed April 3, 1943, in Georgia.

areas. The plants, however, are easily killed by frosts, and it is a far safer plan to sow the seed at the time recommended for the locality.

Sow Smaller Yardage

Better care can be given to a small yardage. Beds well cared for and protected against blue mold have consistently produced 30,000 plants or more to 100 square yards, and even under average care beds of this size can be depended on for 15,000 plants, or enough to set almost 3 acres.

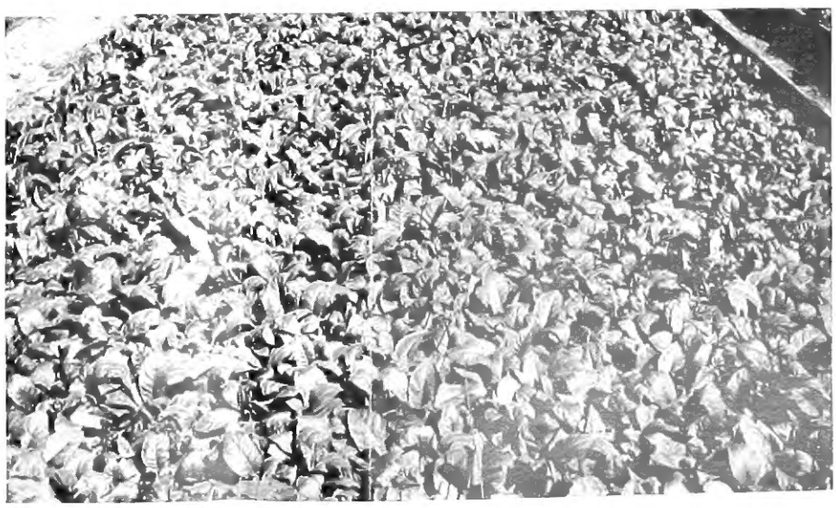
Treat for Blue Mold

Gas and spray treatments give equally effective results if used properly. It is by no means certain, however, that all materials will be available in all areas, and the control method selected may depend on the material available.

Purchase Materials Now

In view of the scarcity of supplies and the need for planning production well in advance, tobacco growers will do well to purchase materials required for blue mold control without delay.

Result of sowing tobacco plant bed at the proper time and protecting it against blue mold and frost damage—about 30,000 large, vigorous plants to 100 square yards of bed. Photographed April 2, 1943, at the Coastal Plain Experiment Station, Tifton, Ga.



GAS TREATMENT vs. SPRAY TREATMENT

There has been some question as to the comparative merits of gas and spray treatments for blue mold control, but a great deal of test work over a period of years shows that equally good plants and equally as many will be obtained by either method. It is merely a question of using some method properly. Gas treatment has the advantage that the grower can wait until the disease appears before beginning treatment; spray treatment is less expensive. It is well to remember that in blue mold control, mild outbreaks, which result in slight delay or loss of plants, are of no importance; hence, it is not essential absolutely to eliminate the disease.

The following recommendations have been tested and are acceptable, but other methods that have been tried in various localities may be equally satisfactory. For these directions consult the county agricultural agent or the State agricultural college. For a fuller explanation of the treatments described in the following pages consult these publications of the United States Department of Agriculture:

Farmers' Bulletin 1799, Blue Mold (Downy Mildew) Disease of Tobacco.

Leaflet 209, Gas Treatment for the Control of Blue Mold Disease of Tobacco.

GAS TREATMENT

The paradichlorobenzene treatment is the only gas treatment for blue mold control now used in this country. The material is commonly called P. D. B. or Parabacco.

Stretch regular thin cotton cover (free of holes) tightly over the bed, 10 to 15 inches above the ground.

Scatter the No. 6 crystals of paradichlorobenzene over the cotton cover about sundown at the rate of 3 pounds to 100 square yards. During warm weather use only 2 pounds. If the heavy muslin cover is thoroughly wet, 1½ pounds is sufficient, but as a wet cover holds the vapors effectively it must not be left on the bed late in the morning. Few growers have found it practical, however, to wet the cover.

To hold the vapors in the bed, cover with a 60- to 70-thread muslin, weighing 4 to 4½ ounces a square yard. This cover must be larger than the bed, so that the sides can be fastened. One cover will take care of two beds and can serve also as protection from frost damage.

Start treatment about sundown and remove the cover between 8 and 10 o'clock in the morning, before the sun gets very warm, depending on the weather. Take the cover off at 8 during warm weather or when a wet cover has been used.

Treat the bed three consecutive nights if mold is present, and thereafter twice a week. Six to eight treatments will suffice for the season. Some growers prefer to use the three-consecutive-night treatment exclusively and to treat only when mold is found.

SPRAY TREATMENTS

There are now several different spray treatments, and in careful tests conducted in 1943 all gave good blue mold control.

Copper Oxide-Cottonseed Oil Spray

Yellow Cuprocide	8 ounces.
Vatsol O. T. C	8 to 12 ounces.
Cottonseed (salad) oil	2 quarts.
Water	To make 50 gallons.

It is desirable to add about 8 tablespoons of molasses to each 8 ounces of Cuprocide powder. Also, a miscible oil known as S. E. C. oil can be substituted for the cottonseed oil and the Vatsol in the above. Stir the copper powder and the molasses into a thin paste with a little water. In a separate bucket, dissolve the Vatsol in 3 quarts of water and add the 2 quarts of oil. Emulsify by pumping through the spray nozzle, and then dilute with water to 40 gallons. Wash in the copper and bring to 50-gallon volume. Keep the mixture well agitated when filling the sprayer and while spraying, so that the copper will not settle out.

16—37327-1

Bismuth-Subsalicylate Spray

Bismuth subsalicylate	12 ounces.
Vatsol O. T. C	4 to 8 ounces.
Water	To make 50 gallons.

Mix the bismuth and Vatsol, add a little water to make a paste, and then dilute. This mixture must be agitated continuously while being sprayed.

Fermate Spray

Fermate	1 pound.
Vatsol O. T. C	4 to 8 ounces.
Water	To make 50 gallons.

Mix as described for the bismuth-subsalicylate spray. Fermate can be used without the Vatsol, but it will take longer to wet the powder.

Other Sprays

Other spray mixtures, perhaps less available than the three described, also have proved effective against blue mold. For example, cottonseed oil ½ gallon, benzyl salicylate 2 ounces, plus an emulsifier—the whole diluted to 50 gallons.

All Sprays

All spray treatments must begin in advance of disease appearance, preferably when blue mold is first reported in the area. Protection with either the copper oxide-cottonseed oil or the bismuth-subsalicylate mixture is more prolonged than with Fermate, hence it is important when using Fermate not to stop spraying until the plants are set or blue mold has definitely disappeared. Fermate protection was excellent as long as spraying was continued.

Applications should be twice weekly and should be continued until time for transplanting, or until the sprayed bed has had a mild attack of blue mold and recovered. Growers should plan to make 6 to 12 applications, the smaller number being adequate in mild seasons in the more northerly areas, while the larger number may be required in some years in Georgia. If the cover is well above the plants and stretched tight, the early sprays are applied through the cotton.

An average of 4 gallons of spray is required to 100 square yards of bed at each application. Small plants take 2½ to 3 gallons, and large ones 5 to 6 gallons.

All materials for both gas and spray treatments will keep at least 2 years if stored in a dry place.

U. S. GOVERNMENT PRINTING OFFICE 16—37327-1

Treat for Blue Mold

Gas and spray treatments give equally effective results if used properly. It is by no means certain, however, that all materials will be available in all areas, and the control method selected may depend on the material available.

Purchase Materials Now

In view of the scarcity of supplies and the need for planning production well in advance, tobacco growers will do well to purchase materials required for blue mold control without delay.

sowing tobacco plant bed at the proper time and it against blue mold and frost damage—about ge, vigorous plants to 100 square yards of bed. hed April 2, 1943, at the Coastal Plain Experiment , Ga.

16—37327-1

16—37327-1